CLAIMS

That which is claimed is:

1. A method of operating an electronic device, comprising:

generating a microphone signal by a microphone;

determining autocorrelation coefficients based on the microphone signal;

determining gradient values from the autocorrelation coefficients; and

determining presence of a noise component in the microphone signal based on the gradient values.

2. The method of Claim 1, wherein determining the presence of the noise component in the microphone signal is based on smoothness of the gradient values.

3. The method of Claim 2, wherein determining the presence of the noise component in the microphone signal is based on whether a rate of change of the gradient values satisfies a threshold value.

4. The method of Claim 1, wherein:

determining autocorrelation coefficients comprises generating sampled values of the microphone signal that are delayed by a range of delay values, and generating autocorrelation coefficients based on the delayed sampled values of the microphone signal; and

determining the presence of the noise component comprises determining whether the gradient values are about equal to a threshold value within a subset of the range of delay values.

5. The method of Claim 4, wherein determining whether the gradient values are about equal to a threshold value comprises determining whether the gradient values are substantially zero for delay values that are substantially non-zero.

6. The method of Claim 4, wherein determining the presence of the noise component comprises determining whether the gradient values have a zero crossing for delay values that are substantially non-zero.

7. The method of Claim 1, wherein determining the presence of the noise component comprises determining whether the gradient values satisfy a threshold value.

8. The method of Claim 1, wherein the noise component in the microphone signal is wind noise.

9. An electronic device, comprising:

a microphone that is configured to generate a microphone signal;

an autocorrelation unit that is configured to generate autocorrelation coefficients based on the microphone signal;

a gradient unit that is configured to generate gradient values from the autocorrelation coefficients; and

a wind detector that is configured to determine presence of a noise component in the microphone signal based on the gradient values.

10. The electronic device of Claim 9, wherein the wind detector is configured to determine the presence of a noise component in the microphone signal based on smoothness of the gradient values.

11. The electronic device of Claim 9, wherein:

the autocorrelation unit is configured to generate sampled values of the microphone signal that are delayed by a range of delay values, and is configured to generate autocorrelation coefficients based on the delayed sampled values of the microphone signal; and

the wind detector is configured to determine the presence of a noise component in the microphone signal based on whether the gradient values are about equal to a threshold value within a subset of the range of delay values.

12. The electronic device of Claim 9, wherein the wind detector is configured to determine the presence of a noise component in the microphone signal based on whether the gradient values have a zero crossing for delay values that are substantially non-zero.

13. The electronic device of Claim 9, wherein the wind detector is configured to determine whether the gradient values satisfy a threshold value.

14. The electronic device of Claim 9, wherein the electronic device comprises a wireless communication terminal.

15. The electronic device of Claim 9, wherein the noise component in the microphone signal is wind noise.

16. The electronic device of Claim 9, further comprising a delay chain unit coupled between the microphone and the autocorrelation unit and that is configured to generate a plurality of delayed signal samples based on the microphone signal, wherein the autocorrelation unit is responsive to the plurality of delayed signal samples and the microphone signal.

17. The electronic device of Claim 9, wherein the autocorrelation unit is configured to generate autocorrelation coefficients by weighting newer ones of the plurality of delayed signal samples greater than older ones of the plurality of delayed signal samples.

18. A computer program product configured to process a microphone signal produced by a microphone in an electronic device, comprising:

a computer readable storage medium having computer readable program code embodied therein, the computer readable program code comprising:

computer readable program code for determining autocorrelation coefficients based on the microphone signal;

computer readable program code for determining gradient values from the autocorrelation coefficients; and

computer readable program code for determining the presence of a noise component in the microphone signal based on the gradient values.

19. The computer program product of Claim 18, wherein the computer readable program code for determining the presence of a noise component comprises computer readable program code for determining the smoothness of the gradient values.

20. The computer program product of Claim 18, wherein:

the computer readable program code for determining autocorrelation coefficients comprises computer readable program code for generating sampled values of the microphone signal that are delayed by a range of delay values, and computer readable program code for generating autocorrelation coefficients based on the delayed sampled values of the microphone signal; and

the computer readable program code for determining the presence of the noise component comprises computer readable program code for determining whether the gradient values are about equal to a threshold value within a subset of the range of delay values.

21. The computer program product of Claim 18, wherein the computer readable program code for determining the presence of a noise component comprises computer readable program code for determining whether the gradient values satisfy a threshold value.